

Abstract

A nonlinear optical crystal device (21), a wavelength conversion element, is surrounded with a heat sink (22) having cooling fins (23a, 23b, 23c). Cartridge heaters (24) for uniformly heating the nonlinear optical crystal device (21) are arranged in the heat sink (22), and the temperature of the cartridge heater (24) is regulated by a heater controller (30). Laser light is entered into the nonlinear optical crystal device (21), and delivered therefrom after its wavelength is converted into a shortened wavelength. When the repetition frequency of laser light is high, heating by the heaters (24) is stopped, and cooling is effected with the heat sink (22). When the repetition frequency of laser light is low, heating by the heaters (24) is carried out to maintain the temperature of the nonlinear optical crystal device (21) to be a temperature at which a conversion efficiency is satisfactory.